Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

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April 2, 2015

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LOS ANGELES COUNTY DRAFT RENEWABLE ENERGY ORDINANCE – PROJECT NO. R2014-01160-(1-5) – APRIL 8, 2015 – AGENDA ITEM NO. 5 * SUPPLEMENTAL MATERIAL *

MARCH 18, 2015 PUBLIC HEARING

A public hearing on the Ordinance and the Draft Environmental Impact Report (EIR) was held before your Commission on March 18, 2015 at the Antelope Valley Transit Authority Headquarters in the City of Lancaster. Thirteen (13) members of the public testified and raised various concerns regarding the Ordinance. Your Commission also raised questions for staff, and continued the matter to April 8, 2015.

OVERVIEW

Over the last several years, local, state and federal agencies have been tasked to improve their processes to facilitate renewable energy projects in response to opportunities provided to the emerging renewable energy industry through legislative mandates and incentive programs. The benefits of being less dependent of fossil fuels are clear, but to develop these projects in an environmentally and community context-sensitive way requires careful thought.

The challenge with the County's Renewable Energy Ordinance (REO) is to identify the issues and provide a process to resolve those issues as efficiently as possible. Because efforts are underway from multiple regulatory perspectives, it is helpful to illustrate where the REO is positioned and how it complements other efforts, especially those within the County.

The following report identifies the regulatory context in which REO has been developed, its intended role in promoting certain types of renewable energy that have little or no environmental effect, and its ability to carefully regulate more environmentally resource demanding types, such as ground mounted, utility-scale solar and wind energy power generation. Lastly, the report will describe other efforts at the State and County level that promote, manage and regulate renewable energy.

EXISTING STATE LEGISLATION

Although the Ordinance will regulate solar and wind energy development within the County, the State of California ("State") has expressed that its policy is to promote all feasible uses of alternative energy supply sources, and enacted legislation accordingly. State legislation regulating the use of solar and wind energy in particular is discussed below.

Renewables Portfolio Standard (RPS) Program

Although the State's specific requirements to limit local government's regulation of solar and wind energy projects are primarily related to small-scale solar and wind energy systems, the State is also promoting the retail sale of solar and wind energy through its RPS program.

The RPS program was established in 2002 under Senate Bill (S.B.) 1078, accelerated in 2006 under S.B. 107, and expanded in 2011 under S.B. 2. The RPS program requires 25 percent of electricity retail sales in the State to be served by renewable energy by the end of 2016 and 33 percent by the end of 2020.

Solar

The State has enacted legislation to promote the use of solar energy, which has helped increase solar energy generation within the State.

Solar Rights Act

The Solar Rights Act, which was enacted in 1978 and since amended several times, promotes the installation of small-scale solar energy systems as the Legislature has declared the State's commitment to reduce the State's dependence on nonrenewable fossil fuels, supplement existing energy sources, and decrease the air and water pollution which results from the use of conventional energy sources.

Consistent with this goal, it requires local governments to pass ordinances which do not unreasonably restrict solar energy systems. The Solar Rights Act provides a narrow definition of "reasonable restrictions", which limits the authority of local jurisdictions to regulate small-scale solar energy systems.

The Solar Rights Act also limits review of small-scale solar energy systems to a ministerial review of health and safety requirements of local, state, and federal law. If a finding is made, based on substantial evidence, that the solar energy system could have a specific adverse impact upon health and safety, the local government may require a use permit. However, a local government may not deny an application for a use permit unless it makes this finding and another finding that there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact.

The Solar Rights Act has also been amended to include a permit streamlining for small-scale solar residential rooftop solar energy systems to further facilitate solar energy systems for single

or duplex family dwellings of 10 kilowatts (kW) or less (alternate current nameplate) or 30 kW or less (thermal).

Solar Shade Control Act (SSCA)

The SSCA, which was enacted in 1978, provides protection to solar energy systems from shading caused by trees and shrubs on adjacent properties. The SSCA accomplishes this by providing specific requirements to prohibit solar shading from trees and shrubs and location requirements related to height and setbacks for solar energy systems. The SSCA only applies to small-scale solar energy systems.

California Government Code Section 66015

This section establishes limits on the permit fee a local jurisdiction can charge for residential and commercial rooftop solar energy systems.

Wind

The State has enacted legislation, California Government Code sections 65893-65899, to promote the use of wind energy. Within this body of legislation the State recognizes small-scale wind energy systems as an excellent technology to help achieve its renewable energy goals and encourages local agencies to develop ordinances that facilitate the installation of small-scale wind energy systems. Consistent with this goal, it encourages local agencies to not unreasonably restrict the ability of property owners to install small-scale wind energy systems. To this end, a county is limited in its regulation of small wind energy systems located outside an urbanized area so long as the notice, tower height, setback, view protection, asesthetics, aviation, and design safety requirements are not more restrictive as set forth in Government Code section 65896. For example, decibel levels cannot be regulated less than 60 decibels measured from the nearest property line. Additionally, these small wind energy systems are prohibited where otherwise prohibited by law as provided in Government Code section 65896(b)(17). Local jurisdictions are not allowed to adopt an ordinance that imposes requirements and conditions on small-scale wind energy systems that are more restrictive than the list.

PURPOSE OF PROPOSED ORDINANCE

The Ordinance was developed with two primary purposes in mind. The first is to better regulate utility-scale solar and wind energy facilities by providing comprehensive regulations aimed at addressing specific issues and concerns. These issues and concerns were raised through the County's experience with previous utility-scale projects, and address environmental impacts and community compatibility. Due to legislative mandates and market conditions (such as tax credits, the availability of power purchase agreements, and other financial incentives), a large influx of utility-scale solar and wind energy facilities were proposed within the County (up to 39 projects filed as of August 2013). As these brand-new uses were reviewed and constructed, the County learned that considerations such as method of site preparation and panel installation, the specificity for minimum landscaping requirements and water needs, and enhanced tools for County Department of Regional Planning ("Department") Zoning Enforcement staff to address

time-sensitive violations, all required greater specificity and legal authority for the benefit of applicants and the surrounding community. Although future conditions for these types of projects are unclear, the Ordinance was developed to address the issues and concerns associated with these types of projects should any future projects be proposed within the County.

The second primary purpose of this Ordinance is to support the State's legislative mandates and policy of promoting renewable energy development. The Ordinance accomplishes this by encouraging distributed generation and reducing dependence on utility-scale solar and wind energy facilities as sources for renewable energy. The Ordinance facilitates the development of solar and wind energy systems generating energy for on-site use as well as structure-mounted projects by establishing a streamlined permitting process, and including minimal regulations to incentivize these types of projects. The permitting process and regulations are much simpler for these types of projects than ground-mounted utility-scale solar and wind energy facilities. All ground-mounted utility-scale solar and wind energy facilities require a Conditional Use Permit (CUP) while a structure-mounted utility-scale solar energy facility is generally permitted by right, and structure-mounted utility-scale wind energy facilities generally require a Minor CUP. Furthermore, small-scale solar energy systems are generally permitted with structure-mounted systems requiring no Department review, and a Site Plan Review for ground-mounted systems. All small-scale wind energy systems require a Minor CUP as currently required in the County Code.

STATE AND COUNTY RENEWABLE ENERGY EFFORTS

There are many other efforts underway at both the State and County levels that further support a distributed generation model for renewable energy on buildings and structures, and acknowledge the need to address environmental impacts associated with certain renewable energy. These efforts, as further described below, help support this strategy at a larger scale. So while the Ordinance is necessary to better regulate renewable energy development, namely utility-scale solar and wind energy facilities, it is only one component of a larger strategy within the State and County to support renewable energy development in a responsible and balanced manner.

Desert Renewable Energy Conservation Plan (DRECP)

The DRECP is a State-led effort to create a framework to streamline renewable energy permitting while planning for the conservation of threatened and sensitive species and other resources on more than 22 million acres of land in Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties. The DRECP considers renewable energy development on a larger scale for the California Mojave and Colorado/Sonoran desert region to provide an ecosystem approach to impact mitigation and landscape-level natural resources conservation through strategic habitat conservation. This effort is a collaboration between the California Energy Commission, California Department of Fish and Wildlife, the U.S. Bureau of Land Management, and the U.S. Fish and Wildlife Service. Please see Attachment 1 for the DRECP Overview Fact Sheet.

The DRECP focuses renewable energy development to specific areas to minimize associated impacts. Across all seven counties, the DRECP identifies Development Focus Areas (DFAs) that may accommodate up to 20,000 megawatts of power from renewable energy projects and associated transmission over the next 25 years. Within LA County, the DRECP identifies conservations areas, areas for further study, and DFAs for solar energy only. While this effort is coordinated at the State level, the DRECP does not override local zoning authorities in considering and approving renewable energy projects. Rather, through the DRECP, an expedited permitting process could be established for "take" permits normally issued by the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

Staff has reviewed and provided comments on the Draft DRECP and associated Draft EIR. The County is also a member of the DRECP Stakeholder Committee, and has been meeting with California Energy Commission staff to address LA County's needs, including emphasis in protecting the County's Significant Ecological Areas (SEAs), which have been incorporated into the DRECP. More information about the overall project can be found at http://www.drecp.org.

County

The County is also engaging in efforts beyond this Ordinance to support renewable energy development. These efforts will work together with the Ordinance to increase renewable energy generation through distributed generation and in a manner that minimizes impacts to surrounding communities.

Community Climate Action Plan (CCAP)

The CCAP is a component of the Air Quality Element of the 2035 General Plan and seeks to reduce greenhouse gas (GHG) emissions that are generated by community activities. The CCAP establishes a GHG emissions reduction target consistent with A.B. 32 and provides an implementation program to meet the target.

The CCAP identifies five strategy areas to reduce GHG emissions, one of which is green building and energy (BE). There is one BE action to increase solar energy generation in particular in the unincorporated areas:

> BE-3: Solar Installations – Promote and incentivize solar installations for new and existing homes, commercial buildings, carports and parking areas, water heaters, and warehouses.

Action BE-3 encourages existing and future development to voluntarily install solar photovoltaic systems, where economically and technically appropriate. The action supports project developers and current property owners by promoting low-interest financing and streamlining regulatory procedures related to renewable energy installations.

The CCAP also identifies several initial implementation steps to implement Action BE-3, of which the Ordinance is one implementation measure:

1. Identify and remove regulatory or procedural barriers to producing solar energy in building and development codes, design guidelines, and zoning ordinances.

2. Identify partnerships with utilities and other entities to expand existing incentive programs.
3. Adopt the Renewable Energy Ordinance that outlines development guidelines for solar installation.
4. Initiate outreach and education programs.

The CCAP emphasizes the importance of reducing building energy-related emissions, recognizes that the majority of GHG emissions reductions in the building energy sector are achieved by actions to increase renewable energy generation, and encourages the development of small-scale solar energy systems throughout the County.

A report was also prepared on behalf of the County that provided an initial assessment of potential new financing options for the CCAP's energy efficiency and renewable energy measures (please see Attachment 2 for this report).

Use of Solar on County Facilities

Under the leadership of the Board of Supervisors ("Board"), the County has set a goal for reducing energy consumption in its buildings by 20 percent, and requiring that most new County buildings be built to the LEED-Silver level of certification or better. On November 25, 2014, the Board directed the Chief Executive Officer and Director of Internal Services to accelerate this effort, and develop a pilot project to install additional solar panels on County buildings (please see Attachment 3 for the Board Motion). This pilot project is currently underway with a number of sites already identified, including Sheriff, library, park and Internal Services Department (ISD) facilities. A report to the Board on the status of the project is anticipated for May 2015. A representative from ISD has also been invited to attend your April 8, 2015 hearing, to provide additional background and answer any questions. There is also an opportunity after submittal of the Board report in May for ISD to present the status of the project before your Commission.

Solar Amendments to County Building Code

As discussed previously, A.B. 2188 mandates local jurisdictions to adopt a simplified procedure for residential rooftop solar energy systems, which are solar energy systems mounted to the rooftop of one- or two-family dwellings. The County Department of Public Works Building and Safety Division (Building and Safety) is currently drafting an ordinance to amend the County Building Code that incorporates the requirements of A.B. 2188 and expedites the permitting process. Staff has consulted with Building and Safety on these amendments and the proposed Ordinance to ensure compatibility.

RESPONSE TO COMMENTS

As of time of writing, staff is evaluating the questions raised and comments and recommendations made at the March 18 public hearing as well as the correspondence included in the Staff Memo submitted to you on March 26, 2015 and additional correspondence received thereafter (please see Attachment 4 for this additional correspondence). These comments and recommendations express concerns regarding the applicability of Community Standards Districts, size of small-scale solar and wind energy systems, landscaped buffer areas, water usage, and other concerns.

STAFF RECOMMENDATION

Staff requests additional time to comprehensively address the concerns and questions raised by your Commission and members of the public, and provide any updated Ordinance language as appropriate in considering these concerns. Therefore, staff recommends that your Commission continue this matter to April 22, 2015 to allow more time to prepare this additional information.

I MOVE THAT THE REGIONAL PLANNING COMMISSION CONTINUE THIS MATTER TO APRIL 22, 2015.

MC:SMT:JL

Attachments: 1: DRECP Overview Fact Sheet
2: Energy Finance Report
3: Board Motion for County Solar Efforts
4: Additional Correspondence

ATTACHMENT 1: DRECP OVERVIEW FACT SHEET

DRECP Overview

The Desert Renewable Energy Conservation Plan (DRECP) is an innovative, landscape-scale renewable energy and conservation planning effort covering more than 22 million acres in the California desert. The DRECP planning area covers private, state and federal lands in seven counties--Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino and San Diego.

The DRECP uses best available science to identify development focus areas that may accomodate up to 20,000 megawatts of power from renewable energy projects and associated transmission over the next 25 years. The plan also identifies conservation areas, sensitive plant and wildlife species and a strategy for their management into the future.

The draft DRECP, released in September 2014, was prepared by a team of state and federal agencies which include the U.S. Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), California Energy Commission (CEC) and California Department of Fish and Wildlife (CDFW). The DRECP consists of three components, a BLM Land Use Plan Amendment, USFWS General Conservation Plan, and CDFW Natural Communities Conservation Plan.

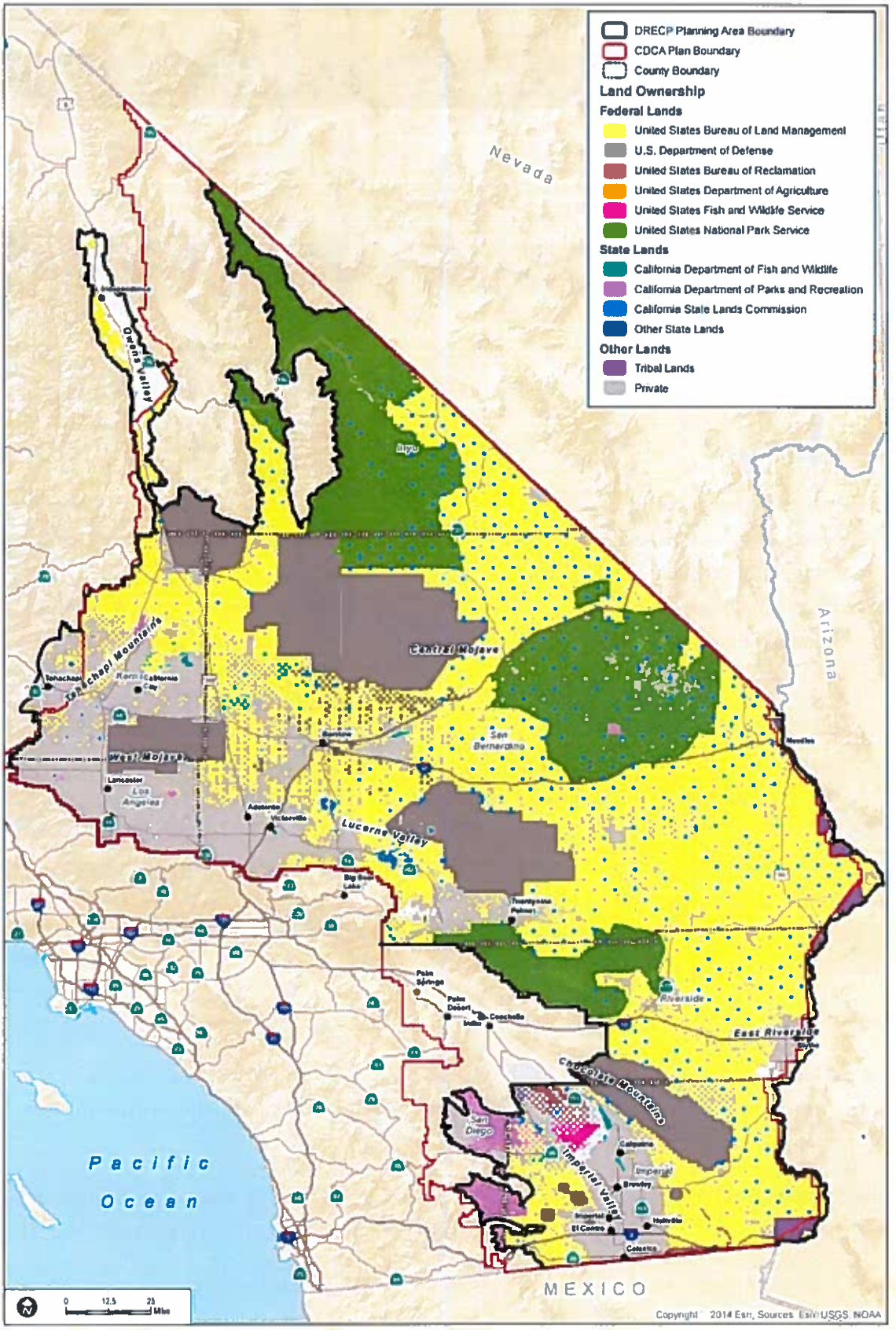
The DRECP will...

- Help California and the nation meet renewable energy and greenhouse gas emission reduction goals.
- Identify areas appropriate for renewable energy development and coordinate state and federal environmental review and permitting process.
- Identify conservation areas for sensitive cultural resources, plant and wildlife species and provide a framework for adaptive management in the face of climate change.

The plan has two overarching sets of goals:

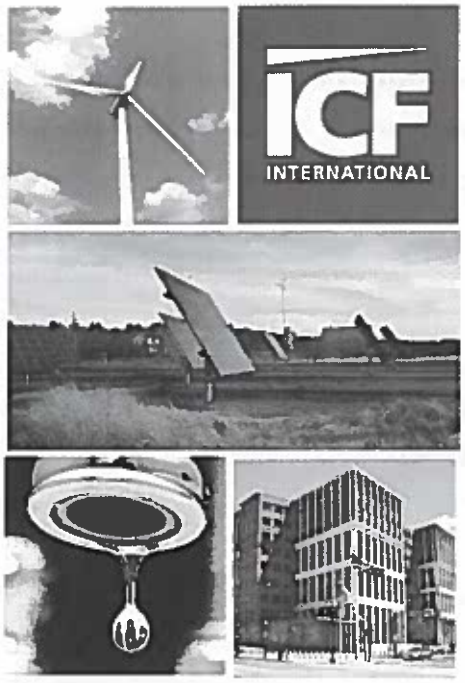
- **Renewable Energy and Transmission:** The plan identifies specific development focus areas with high-quality renewable energy potential and access to transmission in areas where environmental impacts can be managed and mitigated.
- **Desert Conservation:** The plan specifies species, ecosystem and climate adaptation requirements for 37 covered species and 31 natural communities, well as the protection of recreation, cultural and other desert resources.

DRECP Plan Area



For more information about the DRECP, visit *www.drecp.org*

ATTACHMENT 2: ENERGY FINANCE REPORT



Los Angeles County Clean Energy Financing Options - Final Report

An assessment of financing strategies for energy efficiency and renewable energy projects in Los Angeles County

April, 2014

Table of Contents

1) Executive Summary

The purpose of this report is to provide an initial assessment of potential new financing options for the Los Angeles County (County) Community Climate Action Plan (CCAP)'s energy efficiency and renewable energy measures.[1] This high-level assessment focuses on new financing options most relevant to the County's unincorporated areas that support the residential, commercial, and industrial sectors. This report may also be used to narrow and prioritize financing options for further examination and implementation.

For each new financing option (where applicable), the report:

1) Provides a basic summary of how the option works.
2) Discusses its suitability for LA County (unincorporated).
3) Lays out potential challenges.
4) Identifies potential partner organizations that could assist with implementation.
5) Discusses other key considerations including scale, applicable building and technology types, and eligibility requirements.

The approach used to develop this analysis is briefly presented in Section 2 of this report.

Table 1 provides a summary of the results, listed in order of recommended priority. This prioritization is based on the ease of implementation and risks (particularly to the County) associated with each option. The financing options considered in this assessment are described in detail in Section 3 of this report.

Table 2 lists additional options not considered for further analysis. These options are discussed for future reference and are summarized in Section 4.

[1] As noted in the analysis, some of these financing measures are also likely suitable to municipal actions that may be included in the Municipal Climate Action Plan (MCAP) but the focus in this assessment was on supporting the CCAP.

Table 1: Summary of Financing Options, in Order of Feasibility (From Most to Least Feasible)

Financing Mechanism	Applicable Sectors*	County's Role	Suitability	Next Steps for Implementation
Solar Leasing and Power Purchase Agreements (PPA)	M R C I	Promotional	Immediate action possible; low effort	Consider strategies to increase consumer awareness and aid communities in leasing as a group.
PACE	R C	Active	Immediate action possible; high effort	Support PACE by including the unincorporated area in the Home Energy Renovation Opportunity (HERO) program, along with the incorporated cities in the County.
Energy Efficient Mortgages (EEMs)	R	Active or Promotional	Immediate action possible; moderate effort	Determine if mortgage lenders are aware of EEMs, how many can execute an EEM, and any difficulties they face. Assess whether to financially incentivize EEMs.
Community Investment Notes and Social Impact Investing	R C	Promotional	Long-term; low effort	Community Investment Notes: determine if local organizations qualify. Impact Investing: conduct study to assess if web-platforms offering crowdfunded donations/financing could serve consumers better than current markets.
External Green Revolving Fund (GRF)	R C I	Active	Long-term; high effort	Determine if external GRF would fulfill an unmet financing need. Consider legal implications.
Carbon Fee or Carbon Tax	M (fee) or R C I (tax)	Active	Fee: Immediate action possible; high effort. Tax: Long-term; high effort.	Fee: Test feasibility of an internal carbon fee to prove concept and make internal operations efficient. Tax: Assess attitudes toward a price on carbon. If residents open to an additional tax, begin study on how tax would be assessed.
On-Bill Repayment (OBR)	R C I	Promotional	Immediate action possible; moderate effort	Engage municipal utilities participating in commercial OBR. Determine interest and feasibility of residential systems.

*M=Municipal, R=Residential, C=Commercial, I=Industrial

Table 2: Financing Options Not Considered for Further Analysis

Financing Mechanism	Reasons for Refraining from Further Analysis
Green Bank	While state governments like Connecticut[2,3] and New York[4] are pursuing green banks, there is no history of municipal governments setting up green banks. Literature regarding green banks indicates these initiatives require more scale—i.e., larger borrowing/lending power at the regional, state or multi-state level.[5]
Performance Contracting	Commercial/Municipal performance contracting is covered by the ESCO section of the Solar Finance Guide. Residential is typically not an applicable market.
Private Equity	Private equity investment in energy efficiency and renewable resources typically requires a scale that is not applicable to residential space. Larger (industrial/municipal) energy projects are investigated on a case-by-case basis and not aided by high-level analysis.
Municipal Bond Financing	LA County's Public Agency Master Lease Program (SoCalRec) fills this niche of leveraging LA County's credit rating to pursue municipal energy projects.
Tax Credits	National databases of tax credits already exist: energysavvy.com or DSIRE.

[2] http://www.greentechmedia.com/articles/read/connecticuts-green-bank-a-model-for-public-private-renewables-partnerships
[3] http://www.ctcleanenergy.com/
[4] http://www.governor.ny.gov/NYGreenBank
[5] http://www.brookings.edu/research/papers/2012/09/12-state-energy-investment-muro

2) Analytical Approach

ICF International (ICF) followed a three-step approach to prepare the assessment.

First, ICF reviewed existing financing strategies in the County and then identified additional financing options that could be appropriate for the CCAP. Second, ICF performed basic research to identify important attributes and the potential viability of each option. ICF also consulted with its network of experts on renewable energy, energy efficiency, finance, and policy. Finally, based on this research and expert inputs, ICF assessed the operational potential of each option, considering each option's readiness for implementation, suitability for LA County, and the difficulty associated with execution. Recommended next steps were identified for the County, should it wish to proceed with implementation.

The results of this assessment can inform the CCAP implementation.

3) Existing Financing Strategies in LA County

This section briefly summarizes some of the key existing financial strategies and incentives in place or available today for renewable energy and energy efficiency in in LA County from a variety of sources.

- Finance Programs under Southern California Regional Energy Network (SoCalREN) which is an energy efficiency program collaborative supported by funding from the California Public Utility Commission, in partnership with Southern California Gas and Southern California Edison:
  - Energy Update California – Los Angeles (EUCLA) Single-Family Home Financing: Through a partnership with Matador's Credit Union, single family homeowners may finance their EUCLA Home Upgrade projects. Matador's Credit Union provides a 4.99%, 5-year term, unsecured loan of up to $40,000 to qualified borrowers. In order to generate initial program participation with competitive terms and conditions, the program uses a loan loss reserve credit enhancement which helps protect the lender against losses due to defaulted loans.
  - Non-Residential Property Assessed Clean Energy (PACE) Financing: ISD and the Treasurer & Tax Collector (TTC) are working together to administer a countywide PACE financing program for non-residential properties. The program provides financing through County issued bonds for private sector energy projects which are then paid back through assessments placed on the building owners' property tax statements. The program also provides marketing, education, recruitment, and technical support to property owners. The program's first PACE assessment was funded in July of 2013.
  - Public Agency Master Lease Financing: This financing program is available to all public agencies and provides lease financing to implement energy projects in municipal buildings. The Southern California Regional Energy Center (SoCalREC) has prequalified a set of financial institutions to provide the financing and has developed a simplified, standard agreement which the public agencies would execute with the financial institutions. The standard agreement also includes non-biased financing program terms and conditions.

- Utility On-Bill Financing for Commercial Customers and Utility Rebates:
  - On-bill financing is currently available for commercial customers (including property owners of multi-family residential units) through SCE and Socal Gas and provides zero percent loans for energy upgrades.
  - A variety of utility rebates are also available in LA County.

- Energy Upgrade California: Energy Upgrade California provides links to a variety of additional financial resources including the following:
  - Financial incentives for energy efficiency and solar power.[6]
  - Income Qualified Assistance programs:[7]
    - Energy Saving Assistance Program
    - California Alternative Rates for Energy

[6] See: https://tools.energyupgradeca.org/county/los_angeles/incentives#h-ic=3294457903&p-ic=1&per-ic=10.
[7] See: https://tools.energyupgradeca.org/income_qualified_overview.

- California Department of Community Services & Development Programs

- Solar Power Purchase Agreement (PPA)/Leasing: Private funding through PPAs and leasing is already common in the LA County Market, but as discussed in the next section, could be broadened through County promotion.

- Energy Service Company Contracts: An ESCO is a business that develops, installs, and finances projects designed to improve the energy and water usage of buildings. The ESCO remains a partner for the life of the project and is responsible for all aspects of the project, including associated technical and performance risks. The ESCO typically conducts an investment grade energy audit, designs the project, obtains bids from subcontractors, manages the construction, guarantees energy savings, obtains financing and often maintains the equipment. The ESCO bills the property owner for a share of the energy-cost savings. ESCOs can operate in Los Angeles County, but the extent of their activity in LA county was not researched as part of this report.

- California Solar Incentives: The state provides a variety of solar financing as follows:
  - CEC New Solar Homes Partnership (NSHP): This program provides financing incentives for new homes to encourage solar in new homes.
  - California Solar Initiative(CSI): This program includes financing incentives for a variety of solar applications for residential and non-residential properties. CSI has dedicated programs for low-income and multi-family housing.

- HUD Title 1 PowerSaver Loans (Secured or Unsecured): The PowerSaver program insures loans to finance small or moderate improvements to a home, such as a solar energy upgrade. The PowerSaver pilot will provide lender insurance for secured and unsecured loans up to $25,000 to single family homeowners specifically targeting residential energy efficiency and renewable energy improvements.[8]

- Federal Solar Incentives
  - Residential Renewable Energy Tax Credit: A taxpayer may claim a credit of 30% of qualified expenditures for a solar system that serves a residence located in the United States that is owned and used as a residence by the taxpayer.[9]
  - Business Energy Investment Tax Credit (ITC): This federal tax credit is equal to 30% of expenditures on a solar system, with no maximum credit.[10]

[8] See: www1.eere.energy.gov/wip/solutioncenter/financialproducts/PowerSaver.html.
[9] See: http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US37F&re=1&ee=1.
[10] See: http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US02F&re=1&ee=1.

4) Financing Options for LA County

This section details the financing options assessed for LA County. Each financing option has a summary, as well as a discussion of suitability for LA County, potential challenges, and next steps. Additional information is included when relevant.

A. Leasing and Power Purchase Agreements

Summary

- Parties involved: Solar developer, energy customer, potential third-party financier
- Applicable sectors: Residential, commercial, industrial, and municipal
- The County's role: Promotional: encourage and facilitate the use of leases and PPAs
- Suitability: Immediate action possible with low level of effort
- Next steps: Strong leasing/PPA program is already pervasive.[11] Investigate market awareness of lease/PPA options and determine strategies to promote and facilitate these options. Study communities that organize and lease as large groups and determine if results are replicable around the County.

Introduction

Under a power purchase agreement (PPA), a third-party developer owns and operates a solar photovoltaic system installed on a host customer's building. The customer agrees to site the system on its property in exchange for purchasing the electricity produced by the system, typically at lower-than-market rates.[12] Leasing is a similar model in which a third-party company owns the solar and leases it to the host which then makes regular lease repayments to the company. The Energy Upgrade California guide describes PPAs and solar leases,[14] and the options are highlighted in the Solar Finance Guide[15] for interested residents of LA County.

Suitability for LA County

This option is highly suitable for LA County, and already common within the area, particularly in terms of solar installations through PPA and leasing firms like SolarCity and Sungevity. This appears to be the preferred leasing option for contractors in the LA County area. Current PPA/leasing providers typically offer installation of equipment for no money down, allowing for reduction in energy bills from day one. Specific financing terms are set based on the credit profile or small business risk of the project recipient.

[11] https://energyupgradeca.org/county/los_angeles/about_solar_financing
[12] http://www.epa.gov/greenpower/buygp/solarpower.htm
[14] https://energyupgradeca.org/county/los_angeles/about_solar_financing
[15] P.2, http://energycenter.org/sites/default/files/docs/nav/policy/research-and-reports/SoCal%20Solar%20Finance%20Guide.pdf

Potential Challenges

There are three primary challenges to widespread adoption of PPA and leasing agreements to finance renewable energy projects in LA County

- Marketing: Lack of consumer awareness of PPA and leasing options in LA County is still the main limiting factor. National polls indicate that the vast majority of Americans favor solar power adoption, but there is an information disconnect.[17] Deepest solar market penetration is achieved when homeowners and neighborhoods organize and bid/sign up for projects as a group.[18]
- Minimum Credit Score: Consumers with low credit scores are not eligible. Typically, a minimum credit score of 680 is needed by most offerings.[19]

Next Steps

LA County already has done an exemplary job arranging support for leasing and PPAs with its residents. As next steps, we recommend that LA County determine how to broaden marketing campaigns for PPA and leasing options within LA County. As part of this effort, LA County could actively provide information on available financing options to real estate owners and managers, real estate brokers, and tenant organizations, as well as energy service installers and contractors. The LA County solar map could provide additional information to assist more targeting marketing of communities with higher solar and roof potential. In addition, special attention might be given to marketing efforts and incentives targeted at owners of new and existing affordable housing projects; because these building owners often pay for tenant utilities, they have a stronger incentive to improve building efficiency and use renewable energy.

One additional opportunity for LA County could be to support neighborhood associations as they try to disseminate information and bundle solar and instillations. When a group of homes or a community act together to seek contractors, the installers can offer discounted rates because of the larger size of the bid. Bundled installations also allow a broader diversity of customers to receive financing (e.g., good credit scores offset bad ones). Some cities have already recognized the benefits of having municipal government aid in the organizing of bundled household bids. For example, the City of Portland's Bureau of Planning and Sustainability, Energy Trust of Oregon, and Solar Oregon offer strategic and technical assistance to neighborhood organizations that are interested in pursuing a "Solarize" project. The City helps to bring the groups together, determine who to hire, and when to start, and has experienced discounts of 15% to 20% off (for both financed and non-financed projects)[20]

[17] http://phys.org/news/2013-08-leasing-solar-cost-saving-option-homeowners.html
[18] http://www.portlandoregon.gov/bps/article/405686
[19] http://www.solarcity.com/residential/solar-lease.aspx
[20] http://www.portlandoregon.gov/bps/article/405686

B. PACE for Residential Properties

- Parties involved: County, residential property owners, solar and energy efficiency vendors
- Applicable sectors: Residential
- The County's role: Promotional/Institutional: Develop residential program and encourage participation
- Suitability: Immediate action possible with low/medium level of effort
- Next steps: Commercial PACE is already operating. Western Riverside COG presents model to expand to residential properties even without current resolution of federal residential guaranteed mortgage issues.

Introduction

LA County already has a PACE (Property Assessment for Clean Energy) program in place that is operational for commercial energy upgrades (http://lapace.org/). Under PACE, loans are extended to fund renewable energy and energy efficient installations and then paid back as part of the property tax payments.

PACE financing for residential customers was interrupted due to a 2010 statement by the Federal Housing Financing Agency (FHFA) advised Fannie Mae and Freddie Mac to avoid acquiring mortgages on homes that participate in a PACE program. The concern is with PACE program with "first liens" (i.e. superior to the mortgage). FHFA also discussed other potential actions that could be taken in areas in PACE programs such as adjusting loan-to-value ratios, ensuring that loan covenants require approval for any PACE financing; and/or tightening borrower debt-to-income ratios. If these actions were taken, a homeowner could, in theory, be declared in default of their mortgage. FHFA has also engaged in rule-making concerning PACE but it is unclear if it will actually complete the rule-making.

In response to the FHFA statement, many PACE programs halted their residential programs (only residential properties get Fannie Mae/Freddie Mac financing) due to concern about potential effects on federally-backed mortgages in the area of the residential PACE program.

Despite the FHFA statement and in lack of any formal rule or enforcement action, certain PACE residential programs have been developed, in which participants are made aware of the potential risks concerning potential actions that could be taken by federal mortgage agencies. Some PACE program proponents argue that that the federally backed housing lenders are not actually banned from serving PACE customers – they simply have to require the mortgage to be paid first and that as long as homeowners understand the risks involved, then they can still legally participate in PACE. Some PACE programs also make the PACE loan a junior lien to the mortgage, but this can make such programs less attractive to private investors.

The HERO program in Western Riverside County, which is also being rolled out by San Bernardino County and other locations in California, is extending PACE funding to residential customers. The program addressed the FHFA's requirements by giving homeowners two cautionary messages. The first message tells homeowners they should review their mortgages for any provisions that may be triggered by the assessment. The second message says they may have to pay off their assessments when they sell or refinance their homes. Many cities in LA County are already exploring joining the HERO program in 2014 (https://www.heroprogram.com/participating).

Suitability for LA County

This option is highly suitable for LA County, and has precedent in Riverside County and San Bernardino County.

Potential Challenges

- In Riverside–San Bernardino, the current HERO program has the following requirements:
    - All mortgage-related debt must not exceed 90% of the value of the property.
    - Mortgage payments must be current at the time of application, and property owner(s) must not have had more than (1) 30-day mortgage late payment over the past twelve months.
    - Property taxes for the prior twelve-month period must have been paid on time and no more than one late payment within the past three years.
    - No outstanding involuntary liens, such as tax liens or mechanic's liens.
    - The property owner(s) must not have filed for bankruptcy in the past two years. If they have a bankruptcy record between two and seven years old, they the property owner(s) must not have had any additional late payments more than (60) days past due in the last (24) months.
    - Mobile homes must be permanently attached to the property and the owner of the underlying property must be the applicant and be subject to real property taxes
- Property taxes typically stay with the property when it is sold. Under the HERO Program, when one sells or refinances the property, the remaining payments may stay with the property. However, lenders may require owners to pay off the remaining balance when refinancing or selling the home.

Next Steps

One option for LA County would be to support PACE by including the unincorporated area in the HERO residential program, along with the incorporated cities in the County.

C. Energy Efficient Mortgages

Summary

- Parties involved: Mortgage lender, mortgage applicant (residential), FHA or alternative federal agency.
- Applicable sectors: Residential
- The County's role: Promotional and/or Active: encourage and facilitate the adoption of EEMs and possibly financially incentivize EEMs with interest rate buy-downs
- Suitability: Immediate action possible with moderate effort
- Next steps: Study local mortgages to find out what portion are EEMs. Determine how many mortgage lenders are aware of EEMs and which can execute an EEM. Find out if lenders have any difficulties or confusion that keeps them from promoting EEMs. Assess whether LA County wishes to financially incentivize EEMs.

Introduction

Energy efficient mortgages enable homeowners/buyers to finance the cost of adding energy efficiency features to new or existing housing as an add-on to a home purchase or refinancing mortgage. Currently, energy efficient mortgages are insured by Fannie Mae, Freddie Mac, the Federal Housing Administration (FHA), and Department of Veteran Affairs.

Structure

EEMs allow a mortgage recipient to borrow more capital (for the purposes of buying energy upgrades) because the energy upgrades will effectively increase the available income of the borrower. EEMs are not a second mortgage—they are "tacked on" when conventional mortgages are undertaken, and the loan is then insured by one of a few different federal agencies (typically the FHA). FHA Energy Efficient Mortgages are for $4000 or 5% of the property value up to $8000, require no additional down payment, and do not affect interest rates (as shown below).

Table 2: Example of Conventional Mortgage and EEM Payments[22]

	Mortgage without EEM	With EEM
Base Loan Amount	$160,000	$160,000
Energy Improvements	$0	$8,000
Total Loan Amount	$160,000	168,000
Down Payment	$5,600	$5,600
Interest Rate	4.75%	4.75%
Monthly Mortgage Payment	$1,301	$1,367
Average Utility Bills	$265	$135
Total of Mortgage + Utility Payments	$1,566	$1,501
Monthly Savings	-	$65
Yearly Savings	-	$779

[22] http://www.structuredenergies.com/energy-efficient-mortgages

Eligibility Requirements

EEMs are only applicable for borrowers purchasing a new home or already refinancing an existing home (e.g., to take advantage of lower interest rates). EEM programs are limited in their ability to reach a majority of the population at any given time. However, they provide more financing at a critical transaction point when borrowers may already be considering a remodel or upgrade work.[23]

Generally speaking, if a mortgage candidate qualifies for a conventional mortgage, they likely qualify for the EEM mortgage add-on. There are some additional requirements of the projects and amounts with regards to EEMs. These are described by the FHA:

- EEM eligible properties are one to four unit existing and new construction. EEMs may be added to some other loan types, including streamline refinances.
- The cost of the energy efficient improvements that may be eligible for financing into the mortgage is the lesser of A or B as follows:
    A. The dollar amount of cost-effective energy improvements, plus cost of report and inspections
    or
    B. The lesser of 5% of:
        - The value of the property, or
        - 115% of the median area price of a single family dwelling, or
        - 150% of the conforming Freddie Mac limit.
- To be eligible for inclusion in the mortgage, the energy efficient improvements must be cost effective, meaning that the total cost of the improvements is less than the total present value of the energy saved over the useful life of the energy improvement.
- The cost of the energy improvements and estimate of the energy savings must be determined by a home energy rating report that is prepared by an energy consultant using a Home Energy Rating System (HERS). The cost of the energy rating report and inspections may be financed as part of the cost effective energy package.
- The energy improvements are installed after the loan closes. The lender will place the money in an escrow account. The money will be released to the borrower after an inspection verifies that the improvements are installed and the energy savings will be achieved.
- The maximum mortgage limit for a single family unit depends on its location, and it is adjusted annually. FHA's maximum mortgage limits by county are available online.

Suitability for LA County

It is not suggested that LA County would actively issue or insure energy efficient mortgages; federal programs through FHA and other agencies should offer the necessary insurance. Instead, one possible role for LA County could to be to promote energy efficient mortgage applications within the County and to make local mortgage issuers aware of EEM

[23] P. 37, http://www.epa.gov/statelocalclimate/documents/pdf/FinancingProgramsResourceGuide.pdf

opportunities and more comfortable with writing EEMs. [24] A handful of state governments have even experimented with rate buy-downs and other ways of financially supplementing EEMs.[25]

Potential Challenges

- Mortgage lenders find EEMs tedious/difficult, for a number of reasons:
- EEMs require more paperwork and processing time for lenders.
- EEMs are harder to sell in the secondary mortgage market.
- Money must sit in escrow while energy options are shopped/installed. This adds complexity and length to mortgage sales process.
  - Borrowers rarely request EEMs and often don't want to add additional complexity to an already monumental financial decision. This is especially true for lower income buyers who require the use of a first time home buyer program.
  - Real-estate agents are largely unfamiliar with EEMs and don't propose them when discussing mortgages for a real-estate transaction.

Next Steps

We recommend that LA County study local mortgages and determine what percent are EEMs and what types of consumers are applying for them—with the goal of determining where promotional efforts around EEM would be most effective. The largest barrier to more pervasive EEM adoption is making sure consumers and real estate agents know about EEMs and know which mortgage lenders are willing to issue them.

LA County could also determine the prevalence of mortgage lenders that are aware of EEMs and can actually execute one. Further research could elucidate whether lenders have specific difficulties or misunderstandings that prevent them from promoting EEMs, and the County might consider developing materials and incentives for lenders to overcome these hurdles.

Lastly, we suggest that LA County consider whether it would like to financially incentivize EEMs. This assessment would likely take into account whether funds are currently available or if they would need to be raised, as well as the type of financial support would be most beneficial for LA County.

[24] This new study quantifies EEM default risks and provides lenders much needed data-- http://www.imt.org/resources/detail/home-energy-efficiency-and-mortgage-risks-executive-summary

[25] http://aceee.org/energy-efficiency-sector/state-policy/Colorado/179/all/201

D. Community Investment Notes and Impact Investing

Summary

- Parties involved: Foundations and note issuers, energy non-profits, micro investors
- Applicable sectors: Non-profit organizations focused on residential and commercial; others possible
- The County's role: Promotional: help non-profits and eligible organizations apply for Community Investment notes and other impact investing options
- Suitability: Long-term option with low level of effort.
- Next steps: Determine whether any non-profit organizations within LA County would benefit from Community Investment Notes, then promote/support them in their application.

Introduction

There are significant pools of capital in the form of low interest concessional and semi-concessional loans available to non-profits and community organizations from impact focused investment firms. These sources of capital can be used for financing building construction, retrofits and other capital projects, including renewable energy and energy efficiency. Community Investment Notes are large loans that become part of portfolios that socially responsible investment firms offer to clients. There are also increasing opportunities in emerging forms of smaller scale impact investing.

Eligibility Requirements

Funding from Community Investment Notes is typically reserved for companies/institutions that are making a "positive social impact." Energy work in LA County may fall into this category, however, that is mostly up to the issuer. While most of these lending institutions seek poverty-related international projects, some like the Calvert Foundation target CDFIs, loan funds, microfinance institutions, affordable housing developers, and social enterprises both domestically and abroad. To get social impact investing dollars into LA County through a Community Investment Note, LA County would likely have to partner with a non-profit institution trying to execute the desired energy upgrades. Calvert issues loans of $1 million to $5 million with interest rates based on Calvert's present cost of capital.

Smaller scale impact investing may have less stringent guidelines and terms that more closely resemble a solar lease, performance contract, or PPA.

Suitability for LA County

LA County would not actively solicit Community Investment Notes. However, LA County could promote the use of Community Investment Notes in local projects/organizations. LA County could also host symposiums, advertise on behalf of local organizations, list capital sources, and guarantee projects.

Another option is for LA County to work to streamline the process of smaller scale impact capital. The County could create a clearinghouse that matches energy upgrade needs/opportunities with web platforms (such as Solar Mosaic, Kiva, or Kickstarter) and impact investors that can enable projects with capital and other forms of support.

Potential Challenges

- There may not be any reasonable partnerships or areas for allocation of Community Investment Note financing in LA County.

Next Steps

With regard to Community Investment Notes, we recommend that LA County determine whether any non-profit organizations within the County might benefit from Community Investment Notes, and then provide assistance with their application or determine which social impact investing organizations have made similar investments. Organizations receiving financing would have to be well established and already funded, so the most likely partner would be an energy-related non-profit that is looking to finance a new campaign.

For smaller scale impact capital, LA County should conduct a study that assesses if web platforms offering crowd-funded donations/financing could serve renewable energy and energy efficiency upgrades better than current markets. As of now, such research in this field is extremely limited but there are example of crowdfunding for renewable energy un the United Kingdom and other locations in Europe.[26]

[26] See: http://cleantechnica.com/2013/12/20/crowdfunded-renewables-game-changer/

E. Green Revolving Fund (GRF) for Non-Municipal Buildings

Summary

- Parties involved: The County, funding recipients, possibly support contractors
- Applicable sectors: Primarily residential and commercial; others possible
- The County's role: Active: manage the GRF, conduct credit risk analysis, collect repayments
- Suitability: Long-term option with high level of effort
- Next steps: Determine whether an external GRF would fulfill an unmet financing need. Consider bylaws, default risk, and other legal implications.

Introduction

A revolving loan fund[27] for County-owned facilities was ratified April of 2012 for $5 million. However, there is an opportunity to explore expanding this financing option to residential and commercial customers. Offering loans to the general public (external loans) introduces some additional risks and complexities, and the following factors will need to be considered by the County and its contractors:

- *Contract law:* Capital lease agreements, loans, or other means to disbursing GRF funding can be drafted fairly easily based on existing templates in many cases. However, LA County will likely need to have these documents generated or at least reviewed by a legal team to ensure they are legally robust in the event of default or litigation.
- *Credit risk analysis*: When issuing loans to outside parties, the issue of default becomes a greater risk. Funding recipients may cease to make their required repayments due to bankruptcy, relocation, poor project performance, disagreement with the County, or other factors. Conducting a complete credit risk analysis before approving each loan can help to mitigate this risk. A complete assessment would likely include credit score as well as other factors such as location and likelihood to relocate and standing in the community. Credit risk could be conducted internally or by contractors.
- *Payment collection:* Collecting and processing payments from loan recipients is also an important consideration. In particular, a secure but streamlined payment process would be needed to minimize transaction costs and ensure that GRF financing is user-friendly. The County may also want to examine contingencies for reclaiming funding or assets in the event of default.
- *Repayment rules:* Repayments to an outward-facing GRF can be structured in a few different ways. First, savings can be measured directly[28] to determine repayments, ensuring that repayments do not exceed actual savings. However, this approach can be costly, as it required annual application of an agreed-upon measurement

[27] http://file.lacounty.gov/bos/supdocs/67734.pdf

[28] Renewable electricity generation can typically be metered on-site. Measurement of savings from energy efficiency must be conducted using a measurement and verification (M&V) approach. The International Performance Measurement and Verification Protocol has standardized these approaches: http://www.nrel.gov/docs/fy02osti/31505.pdf

methodology. Second, repayments can be set according to expected savings determined through upfront engineering estimate, with no connection to actual measured savings. Third, repayments can be structured without any relationship to savings—for example, requiring loans to be repaid within a fixed period of time.

Structure

Funds operated by individual organizations (most of which are in higher education, currently) range from tens of thousands dollars to several million. Among the 79 known revolving loan funds in higher education in 2012, the smallest was $12,000 (Bucknell) and the largest was $13 million (University of Vermont), with a median fund size of $400,000.[29] Funds operated by state governments are often larger, with the Texas LoanSTAR program representing the largest known GRF at $125 million.[30]

Many funds set a minimum project size to ensure that management overhead does not become a disproportionate part of total cost and/or a maximum project size to ensure that GRF financing is spread across multiple projects. Because GRFs rely on repayment of savings from projects to operate, they tend to focus on project with the quickest payback periods. Some funds place explicit restrictions on payback period or return on investment (ROI) to ensure that capital can be quickly recouped.

Eligibility Requirements

Assessing eligible candidates for a GRF loan is possibly the most difficult part of adding an external facing component to LA County's revolving loan fund. Going beyond LA County owned institutions introduces a risk of default and a need for credit risk analysis. However, some municipalities have still found benefits in making external loans through a revolving loan fund.

For example, Palm Beach County in Florida has an external facing green revolving fund that invests in local private, for profit businesses.[31] They use existing tax and accounting practices within the municipal government to aid the GRF's operation. Palm Beach County offers a flat 3% annual fixed interest rate for variable time frames up to 10 years. The project is just underway, but reports that it requires the following information when performing their credit risk analysis:

1. Business history, industry, types of goods and services, and years of service provided (tied to specific type of industry as balance sheet and operating ratios vary considerable from industry to industry).
2. Resume of principals and key management personnel (to assess management history/expertise in this particular industry).
3. Financial statements: 3 years of historical financial or audited statements and tax returns (NOTE: if most recent annual statement is more than two months old, an interim statement of less than 30 days is also required); Statement analysis includes trend analysis, ability to repay debt and adequacy of working capital;

[29] http://greenbillion.org/wp-content/uploads/2012/11/Greening-the-Bottom-Line-2012.pdf
[30] http://www.seco.cpa.state.tx.us/ls/
[31] http://www.pbcgov.com/des/energyfund.htm

4. Projected financial statements - Showing repayment out for the first year, including balance sheets, operating statements, projections and reconciliation of the net worth/capital section of the balance sheets (NOTE: Projections must include the impact of the proposed financing and the underlying assumptions used to create projections, such as: Probability of achievement given the underlying assumptions and project cash flow determination which will service proposed debt)
5. Personal Financial Statements from anyone having 10% or more ownership of the business along with personal tax returns. Personal guarantees are generally required from principals of the applicant (NOTE: Personal Financial Statements are submitted on SBA Form 413 or similar form acceptable to Palm Beach County
6. Credit History; Independent credit investigations conducted on applicants and principals, including real estate searches, Uniform Commercial Code (UCC) searches with the Secretary of State and personal credit reports on the principals.

Available Incentives

Many of the country's revolving funds were set up with specific funding from the American Recovery and Reinvestment Act (ARRA) although some municipalities have issued energy bonds to finance GRF style energy projects. LA County's current GRF finances municipal buildings but may not be sufficient to finance the residential or commercial sectors.

Suitability for LA County

If LA County has capacity or can easily contract the necessary capacity, an external facing GRF may be possible. However, the Energy Upgrade California loans may fill the same niche that an external GRF seeks to fill.

Potential Challenges

- Banking Expertise: To execute a GRF, LA County would have to obtain all of the capacities of a commercial bank or contract out for these capacities.
- The existing $5 million revolving loan program may not be sufficient to run an effective campaign. More capital may need to be raised.
- Similar financing options already exist and are used by installers/contractors.

Next Steps

We recommend that LA County continue to develop its internal GRF offering for municipal buildings, as the benefits are well documented.[32] With regard to an external GRF, we suggest that LA County consider whether a management-intensive external GRF would fulfill an unmet financing need, and whether easier alternatives may exist that do not require setting up a new lending/collection section of municipal government.

[32] http://www.aashe.org/blog/guest-blogger-revolve-or-not-revolve

F. Internal (Municipal) Carbon Fees and Carbon Taxes

Summary

- Parties involved: Municipal energy consumers (fee) or all energy consumers (tax)
- Applicable sectors: Municipal (fee) or residential, commercial, and industrial (tax)
- The County's role: Active: levy fee or tax on electricity and/or fossil fuels consumed and allocate revenue to energy abatement or other uses.
- Suitability: Fee: Immediate action possible with high level of effort. Tax: Long-term with high level of effort.
- Next steps: Determine the feasibility of an internal carbon fee to test concept and make internal operations efficient. Also begin to assess attitudes toward a price on carbon. If residents would be open to an additional tax, begin determining how tax would be assessed.

Introduction

Internal (municipal) carbon fees, and more prominently carbon taxes, are often discussed, but not as widely used. As of 2013, Boulder Colorado is the only municipality in the United States that has an operational carbon tax. Other municipalities around the world have levied internal carbon fees, in which municipal owned entities pay a fee based on their carbon emissions and the money is used to help the municipality reduce its carbon footprint.

Revenue from a carbon tax is typically used to help an institution meet its energy/carbon reduction goals, both internal and county-wide, though some have proposed a "revenue neutral" tax in which carbon taxes replace income taxes and spending levels remain the same.

Structure

Carbon charges can take two forms: carbon fees and carbon taxes.

Carbon fees: An internal carbon fee is levied on all municipal buildings/entities based on carbon production. The internal nature of this type of charge allows makes the process more manageable and the collection of the fee is simplified by the fact that the budget of each internal institution is typically allotted by the municipal government.

The City of Saanich, British Columbia has a fee of $15 per ton of carbon, which is collected from every department based on their annual GHG inventory. Funds are then allocated to project proposals for carbon reduction projects at municipal buildings based on the carbon mitigation per dollar value of each project. This system incentivizes Saanich municipal departments to reduce carbon so that they might incur smaller fees, and to propose the best possible carbon reduction projects so that they might take advantage of the communal pool of money before another department does.

Carbon Taxes: An external, countywide carbon tax, is levied on energy consumption. As mentioned, Boulder, Colorado is the only US municipality currently employing a carbon tax. In Boulder's system, constituents have an added tax on their electricity consumption and

the local utility, Xcel energy, collects the tax through the existing utility bills for the municipal government. Tax rates are as follows: [33]

- Residential Tax Rate: $0.0049/kWh
  - Average Annual Tax: $21
- Commercial Tax Rate: $0.0009/kWh
  - Average Annual Tax: $94
- Industrial Tax Rate: $0.0003/kWh
  - Average Annual Tax: $9,600

Funds from the tax are used to pursue the Boulder Climate Action Plan, which holds Boulder to Kyoto level carbon reduction goals. Since its inception in 2006, the Boulder Climate Action Plan tax has raised between $600,000 and $1.8 million a year and funded weatherization programs, rebates for renewables energy and energy efficiency projects, and efficient lighting coupons.

Suitability for LA County

An internal price on carbon is an excellent way to galvanize a municipal government around reducing energy, savings money, and achieving carbon reduction goals. An external carbon tax is not impossible in LA County, but new taxes are always highly controversial and thus it would be beneficial to study the LA County constituents with polling or some alternative method of determining interest before pursuing such a program. Ultimately, a carbon tax would create a strong incentive system for carbon reductions in line with LA County's CCAP.

Potential Challenges

- "Taxes" are highly unpopular and their acceptance is tied to the base of constituents. The progressive citizens of Boulder, Colorado voted to extend their carbon tax in 2012, after six years of success. However, this example is the exception to the rule.

Next Steps

LA County could begin by determining the feasibility of an internal carbon fee to test the concept and improve the efficiency of internal operations. Revenues could be added to the LA County Energy Revolving Loan Fund Program or could be used to make up any budget shortfalls.

A next step could be for LA County to begin to assess the public's perception of a price on carbon. If residents might be open to an additional tax based on preventing climate change, the County could start exploring how such a tax would be assessed.

[33] https://www-static.bouldercolorado.gov/docs/Tax_At-a-Glance_v05-1-201307081503.pdf

G. On-bill Repayment

Summary

- Parties involved: Municipal utilities, ratepayers, LA County (promotional role)
- Applicable sectors: Commercial and residential
- The County's role: Promotional: link institutional capital with participating residents/utilities
- Suitability: Immediate action possible with high level of effort
- Next steps: Engage municipal utilities participating in commercial OBR and determine interest and feasibility of residential market systems

Introduction

On-bill repayment (OBR) allows a consumer to receive an energy upgrade at no up-front cost and pay back the cost of the project through an added charge assessed on the consumer's energy bill every month. On-bill repayment is currently available for commercial organizations in LA County and provides zero percent loans for energy upgrades,[34] but there is no such option for residential consumers. There is currently no residential OBR offering from the major utilities in LA County, but it may be available in the future The CPUC approved a pilot for master metered multifamily OBR program in September 2013.[35] This section below focuses only on the small subcategory of achieving residential OBR with municipal utilities and what the County could do to support this effort.

Targeting residential buildings adds a certain challenge to OBR. Residential buildings are more often rented or leased. The smaller scale of residential spaces means longer paybacks on project costs. Lastly, there are certain consumer lending laws to consider when making loans to residential customers.

Building and Technology Types

OBR can theoretically accommodate all technology types for the residential space in a variety of types of buildings, though in practice, cost-effective projects with quicker paybacks are easier to finance and challenges associated with residential buildings (renters, consumer lending laws, etc.) need to be overcome.

To finance residential buildings, there is the problem of rented/leased spaces. If an occupant receives financing, implements a project, and then leaves the building and no longer benefits from the energy upgrade, who is responsible for the continuing payments? Residential OBR would likely have to apply a tariff-based system[36] in which the debt obligation from an energy upgrade is assigned to a building's meter. This allows the repayment obligation to transfer to subsequent owners or renters who benefit from the energy upgrade and its corresponding savings. The transfer of OBR obligations is likely more attractive than assumption of debt obligations tied to capital lease transfers of solar and EE projects.

[34] http://energycenter.org/sites/default/files/docs/nav/policy/research-and-reports/SoCal%20Solar%20Finance%20Guide.pdf
[35] See: http://switchboard.nrdc.org/blogs/lettenson/2013-09-19_EE%20Financing%20CPUC%20Press%20Release.pdf
[36] http://www.aceee.org/files/proceedings/2012/data/papers/0193-000154.pdf

Structure

OBR is scalable assuming that the proper contract system is in place with the necessary financing and marketing. In order to achieve large scale adaptation, a few considerations must be made:

Contract system: The longer paybacks of smaller residential projects pose less of a problem when the tariff-based system is employed because repayments periods aren't subject to the length of occupation by one resident.[37]

Certain municipalities also vary interest rates based on the technology. For example, certain Connecticut utilities offer 2.99% on-bill financed loans for certain heat pumps and insulation, while offering 4.99% loans for furnaces and windows. [38]

Assuming that OBR's can achieve the contracts with the necessary tenure, the next step is to secure the necessary financing for residential scale OBR.

Capital: OBR is scalable relative to available capital. Residential OBR systems have been funded in one of three ways:

1. Municipal utilities use their own capital (or capital raised from ratepayers) to fund energy projects
2. Municipal (or state) governments provide the capital, possibly through an existing pool of capital earmarked for energy projects that is redirected to OBR (like a green revolving fund), and collect through the OBR system set up with the participating utility.
3. A third party financier is brought in and the utility acts as collection agency.

LA County could negotiate attractive financing with local financiers or utilities, much like the leasing option, or could finance projects directly.

Marketing: The last scaling consideration is marketing. There needs to be adequate interest from consumers for an OBR system to succeed, and consumers need to be made aware of the option. Research indicates that if OBR financing rates are significantly below market rates, consumers will show interest.[39]

Eligibility Requirements

Consumer meter issues are subject to approval by the California Public Utilities Commission.[40] Additionally, many utilities have cited complex consumer lending laws as prohibitive of residential OBR.[41]

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[37] Loan-based systems typically try to have the projects pay for themselves within the occupant's tenure in the building. This limits the length of paybacks, which limits the types of projects that can be completed.
[38] P. 5-7: http://www.aceee.org/files/proceedings/2012/data/papers/0193-000154.pdf
[39] Conclusion section: http://www.aceee.org/files/proceedings/2012/data/papers/0193-000154.pdf
[40] See "Master-Metered Multifamily with On-Bill Repayment" section:
http://www.wsgr.com/WSGR/Display.aspx?SectionName=publications/PDFSearch/wsgralert-california-on-bill-repayment.htm
[41] P. 11: http://www.aceee.org/sites/default/files/publications/researchreports/e118.pdf

Available Incentives

South Carolina, Connecticut, New York, Indianapolis, Kansas, and Georgia have all used federal funding and/or incentives when setting up their state-wide OBR systems.[42] Typically this was in the form of American Recovery and Reinvestment Act (ARRA) funding, but these programs have also been supplemented by the Rural Utilities Service (RUS) and the Regional Greenhouse Gas Initiative (RGGI).

Suitability for LA County

There is value in helping municipal utilities to set up OBR systems. Default rates on utility bills tend to be far lower than for other debts, such as mortgages and credit card balances.[43] By utilizing this attribute of utility bills, money lent through OBRs can offer substantially lower rates, longer maturities and better terms for an OBR loan relative to conventional EE loans.

In LA County, further exploratory work would be required to determine whether the major utilities serving the unincorporated areas would be willing to extend their services to offer residential OBR.

Potential Challenges

- The consumer lending laws around residential lending are more prohibitive than commercial lending.
- Third-party financiers are less interested in financing OBR compared to conventional loans/leases. Lenders want that monthly contact with the customer through the loan servicing, which can often bring further business (e.g., opening a bank account or taking out another type of loan). Another reason cited is the relative limited history of OBR programs, which makes OBR seem risky and unproven for lenders.
- Utility billing software/processes are rigid and do not accept change easily.
- Not all utilities are viewed favorably by their customers, which could slow adoption.
- Utilities still worry that OBR will increase the risk of non-payment, even though in the case of partial payment, the generation and transmission & distribution charges are senior and paid off first before OBR debts.

Next Steps

As a first step, LA County could engage municipal utilities participating in commercial OBR and assess whether they would be willing to extend this service to their customers if LA County arranges the financing. If utilities were interested, LA County could then proceed to determining a reasonable source of funding. The most likely answer would be existing credit facilities that have participated in energy efficiency and renewable energy financing.

[42] http://www.puc.state.pa.us/Electric/pdf/Act129/OBF-ACEEE_OBF_EE_Improvements.pdf
[43] P. 6, http://www.edf.org/sites/default/files/On-Bill%20Repayment-Unlocking-the-Energy-Efficiency-Puzzle-in-California.pdf

5) Options Not Considered for Further Analysis

The following energy financing options were not considered for further analysis because they are not particularly well suited for the unincorporated areas of LA County or because they are not applicable to the residential sector, such as private equity financing.

A. Green Bank

A green bank is a clean energy finance bank set up by a government entity that combines government money and leverages private capital to provide a combination of low-interest rate funding (making clean energy projects competitive) and low-cost 100 percent up-front loans for energy efficiency projects. The banks are governed by a board of public and private members and can follow a variety of structures. However, all green banks share two objective functions: increase the amount of clean electricity at competitive prices per state dollar and increase efficiency of consumption to maximize benefits to consumers per state dollar.

The existing literature does not show any municipalities in the United States pursuing a green bank option. State governments like Connecticut[45] [46] and New York[47] are pursuing them, but there may be a question of scale for unincorporated LA County.

B. Performance Contracting

Commercial/Municipal performance contracting is covered by the ESCO section of the Solar Finance Guide. ICF conducted further research into residential energy service performance contracting and found a lack of commercial institutions willing to finance individual homes. The residential segment does not represent a core market for any of the nation's larger energy service companies. ESCOs that do participate in the residential market typically target larger multi-family and public housing facilities.[48]

Until the residential ESCO market grows in size, performance contracting will not be an ideal method of rolling out energy solutions to residents of LA County.

C. Private Equity

A variety of Private Equity (PE) firms and private investment funds are active in financing energy efficiency and renewable energy projects and can serve as valuable sources of capital and management expertise. Sizeable gains in carbon reduction at the municipal level can be had through private equity investment in natural gas, hydro, wind, solar, and biomass generation projects as well as large-scale efficiency contracts. However, PE investment in energy efficiency and renewable resources typically requires a scale that is not applicable to residential space. Municipal energy projects are investigated on a case-by-case basis and not aided by high-level analysis.

[45] http://www.greentechmedia.com/articles/read/connecticuts-green-bank-a-model-for-public-private-renewables-partnerships
[46] http://www.ctcleanenergy.com/
[47] http://www.governor.ny.gov/NYGreenBank
[48] P. 5, http://emp.lbl.gov/sites/all/files/REPORT%20lbnl-3479e.pdf

D. Municipal Bond Financing

LA County's Public Agency Master Lease Program (SoCalRec) fills this niche of leveraging LA County's credit rating to pursue municipal energy projects.

E. Tax Credits

National databases of tax credits already exist: energysavvy.com or DSIRE. These are constantly updated and the industry standard for tax credit information, although opportunity may exist for further promotion of these credits by LA County.

ATTACHMENT 3: BOARD MOTION FOR COUNTY SOLAR EFFORTS

AGN. NO.____

MOTION BY SUPERVISORS ZEV YAROSLAVSKY
AND DON KNABE November 25, 2014

Rooftop Solar Pilot Project

Los Angeles County has long been a leader in many areas of environmental policy. Through the leadership of this Board of Supervisors, Los Angeles County set a goal of reducing energy consumption in its buildings by 20% and requiring that most new buildings be built to the LEED-Silver level of certification or better. These policies are sound, from an environmental and fiscal perspective, since the County spends approximately $150 million per year on electricity and natural gas.

The effort to make buildings more energy efficient is, and should remain, the first "green building" priority for the County. But many other public agencies, including the Housing Authority of the County of Los Angeles, have gone beyond simply increasing energy efficiency and have installed solar panels on their buildings. Their experience shows that, when done correctly, installing solar is good for both the environment and the agencies' budgets. To date, however, the County has installed solar systems on fewer than 20 of the 1,154 buildings that the County owns. The Chief Executive Officer and the Director of Internal Services should accelerate the County's adoption of solar and should develop a pilot project to install additional solar panels on County buildings.

MOTION

MOLINA _____

RIDLEY-THOMAS _____

YAROSLAVSKY _____

ANTONOVICH _____

KNABE _____

At the present time, various organizations have proposed models that would facilitate the installation of solar panels on public and private rooftops throughout Southern California. Under one such model, the County could install solar on ten to fifteen buildings with minimal upfront cost and without needing to use the buildings as collateral for any loans. In addition to this model, other non-profit and/or for-profit entities may be interested in working with the County to facilitate installation of solar systems on County-owned buildings. Alternately, the County could invest its own money, or use grant funds, and proceed without relying on third-party financing.

WE, THEREFORE, MOVE that the Board of Supervisors instruct the Director of Internal Services, working in conjunction with the Chief Executive Officer and other appropriate departments, to:

1) Initiate a competitive contracting process to implement a Rooftop Solar Pilot Project to install solar panels on up to 15 County buildings;
2) Return to the Board of Supervisors with the proposed contract(s), no later than 120 days from today, together with an analysis of costs using a County-financing model, so that the Board of Supervisors can select one or both of these options;
3) Report back to the Board of Supervisors at appropriate intervals during the contracting and installation process, and again when the solar panels are completed, regarding ways in which the County can further improve the solar installation process on County buildings in the future and;
4) For the first year after installation of the solar panels, submit a report back to the Board of Supervisors, on a quarterly basis, on solar panel performance and savings in energy costs. After the first year, submit the report annually.

KK S:\Motions\Solar

ATTACHMENT 4: ADDITIONAL CORRESPONDENCE

Jay Lee

From: Karen Cadavona [Karen.Cadavona@sce.com]
Sent: Tuesday, March 31, 2015 5:56 PM
To: Susan Tae; Jay Lee
Cc: Mark A 'Law' Rothenberg; David A Ford; Tony Barranda
Subject: SCE Comment on LA County Renewable Energy Ordinance
Attachments: LA_County_Renewable_Energy_Ordinance_March2015.pdf; SCE_LA_Co_Renewable_Energy_Ordinance_Nov2013.pdf

On behalf of Mark A. Rothenberg, SCE Senior Attorney:

Dear Ms. Tae:

Please find attached Southern California Edison's (SCE) second comment letter regarding the Los Angeles County Renewable Energy Ordinance, as well as the first comment letter from November 2013. As discussed with David Ford, SCE is requesting revision of the Ordinance to clarify that investor owned utilities under the California Public Utility Commission's jurisdiction are exempt from the requirements of the Ordinance.

Regards,
Karen Cadavona
Third Party Environmental Reviews
SCE, Local Public Affairs
2244 Walnut Grove Avenue, GO 1 Quad 4C
Rosemead, CA 91770
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Mark A. Rothenberg
Senior Attorney
Real Properties and
Local Government Affairs
Mark.A.Rothenberg@sce.com

March 31, 2015

VIA EMAIL & US MAIL

Mr. Jay Lee
Department of Regional Planning
Los Angeles County
320 West Temple Street, 13th Floor
Los Angeles, California 90012

Re: Southern California Edison's Second Set of Comments/Proposed Ordinance Amending Title 22 of the Los Angeles Code/Establishment of Regulations for Small-Scale Solar Energy Systems

Dear Mr. Lee:

Southern California Edison ("SCE") appreciates the opportunity to provide the County with comments regarding the above captioned proposed ordinance (the "Ordinance"). SCE understands that the County has released a new iteration of the draft Ordinance. As you may know, SCE submitted comments to the County by letter dated November 26, 2013. For reasons unknown, although the comments are available on the County's web server, the comments do not appear to be listed as part of the DEIR analysis. It also appears that SCE's comments regarding preemption have not been addressed through appropriate revisions to the Ordinance and in staff comments. For example, Section 22.52.1655 of the proposed Ordinance requires the undergrounding of transmission lines. The Ordinance also contains multiple references to conditional use permits being required for solar generation. As discussed more fully in our prior correspondence, SCE solar facilities and transmission lines may not be regulated in this manner. *See* CPUC General Order 131D.

SCE respectfully submits that proposed Ordinance conflicts with the paramount jurisdiction of the California Public Utilities Commission and that the changes proposed by SCE would harmonize the proposed Ordinance with California law. SCE representatives will be in touch with your office to discuss these issues. In the interim, please do not hesitate to contact me should you have any questions or concerns.

Very truly yours,

Mark A. Rothenberg

P.O. Box 800 2244 Walnut Grove Ave. Rosemead, California 91770 (626) 302-6916 Fax (626) 302-6736

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Mark A. Rothenberg
Senior Attorney
Real Property, Local Government Affairs & Licensing
Mark.Rothenberg@sce.com

November 26, 2013

VIA US MAIL

Ms. Thuy Hua
Los Angeles County Department of Regional Planning
320 West Temple Street, 13th Floor
Los Angeles, California 90012

Re: **Proposed Ordinance Establishing Baseline Standards for Renewable Energy Projects**

Dear Ms. Hua:

Thank you for providing Southern California Edison ("SCE") with a copy of the above captioned Ordinance (the "Ordinance"). The Ordinance provides a series of requirements that will assist the County in regulating the siting of renewable energy projects. The purpose of this letter is to advise the County as to our concerns regarding the Ordinance and to request clarifications that will harmonize the Ordinance with California law.

The design of SCE's generating stations, substations, and transmission lines (including, but not limited to interconnection facilities) are regulated by Order of the California Public Utilities Commission ("CPUC"). Unfortunately, the Ordinance creates regulations (inclusive of design requirements) that either expressly or implicitly conflict with the CPUC's jurisdiction. For example, Section 22.52.1620 of the Ordinance would require that SCE obtain discretionary approvals from the County prior to developing a solar facility. Pursuant to CPUC General Order 131D, SCE is required to consult with jurisdictions. However, the CPUC has clarified that SCE is not required to seek discretionary approvals such as conditional use permits. Accordingly, the County would be expressly preempted from enforcing these requirements against SCE installations. *See San Diego Gas & Electric Co. v. City of Carlsbad*, 64 Cal. App. 4th 785 (Cal. App. 4th Dist. 1998) (City preempted from enforcing requirements where CPUC has either expressly or implicitly entered the field of regulation). Similarly, Section 22.52.160(H) of the Ordinance establishes undergrounding requirements for transmission lines. The undergrounding of SCE's transmission lines is governed under SCE Tariff Rule 20. A Tariff Rule is a rule of service that is approved by the CPUC. *See City of Anaheim v. Pacific Bell Co.*, 119 Cal. App. 4th, 838 (Cal. App. 4th 2004) (undergrounding tariff rule constituted CPUC's entry into field of regulation for utility undergrounding).

It is not clear to SCE whether the County intended to regulate renewable generating facilities owned and operated by SCE or our interconnection facilities (whether or not such facilities serve privately owned facilities). Accordingly, SCE respectfully requests that the County clarify that SCE is not subject to the requirements of the Ordinance. Therefore, SCE proposes the following text be added to Section 22.52.1610(B).

P.O. Box 800 2244 Walnut Grove Ave. Rosemead, California 91770 626-302-6916 Fax (626) 302-1926

B. Exemption. The provisions of this part 15 shall not apply to any small scale renewable energy system, utility-scale renewable energy facility, or temporary meteorological tower approved prior to the effective date of the ordinance establishing this part 15. In addition, the provisions of this part 15 shall not apply to: (i) systems (inclusive of small-scale renewable energy systems, utility-scale renewable energy facilities, or wind towers) owned or operated by publicly regulated utilities; (ii) facilities that are subject to regulation by the California Public Utilities Commission; (iii) facilities that interconnect small-scale renewable energy systems, utility-scale renewable energy systems, or wind towers, (including, but not limited to transmission lines or substations owned or operated by a publicly regulated utility); or (iv) any other facility or equipment where the County is otherwise preempted from exercising its jurisdiction.

SCE respectfully submits that the inclusion of the foregoing clarification will eliminate conflicts in the future and will ensure that the proposed Ordinance is compliant with California law. Thank you in advance for your assistance in this matter and for considering SCE's concerns.

Sincerely,

Mark A. Rothenberg

MR:yl:LA County Dept of Reg Pln.docx